

METHOD FOR OBTAINING ECOLOGICALLY PURE MAGNETIZED WATER

V.S. Patrasenko and N.G. Shevtsov

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METHOD FOR OBTAINING ECOLOGICALLY PURE MAGNETIZED WATER

[Sposob polucheniya ekologicheski chistoi omagnichennoi vody]

Inventors:	Valentin Stepanovich Patrasenko and Nikolai Gueorguievich Shevtsov
Applicants:	Valentin Stepanovich Patrasenko, Nikolai Gueorguievich Shevtsov
Patent holders:	Valentin Stepanovich Patrasenko, Nikolai Gueorguievich Shevtsov

The invention relates to the food industry and can be used in the production of ecologically pure drinking water suitable for use in food without additional household treatment (filtration, boiling) and corresponding to the drinking water quality standards and organoleptic characteristics.

There exists a known method for obtaining ecologically pure drinking water by means of electric activation according to which the purification of the water from impurities and mineral salts is done by decomposition of the microbes and their toxins as well as the other organic impurities in the water and carbonic acid gas [1].

This method of obtaining activated water results in significant improvement of its gustatory and useful qualities but on the other hand requires considerable material outlays (complex technological equipment, low reliability, etc.).

The method for purification of liquids from ferromagnetic impurities [2] is the closest to the proposed one; it includes setting of the liquid for 2 minutes, flocculation and filtration of the ferromagnetic impurities; the flocculation is done at velocity of 0.4 m/sec and the filtration at 0.06 m/sec.

However, the conditions and the mode of operation of the above method do not result in high productivity, and appropriate quality, ecological, medicinal, and prophylactic properties of the processed liquid.

The main task of the present invention is to develop a method that permits the production of ecologically pure magnetized water with medicinal and prophylactic properties by creating procedures and conditions for changing the qualitative parameters of the product.

This task is solved by means of a method for obtaining ecologically pure magnetized water implemented under the effect of magnetic field, including setting and flocculation of the liquid, filtration, cooling, and dispensing of flavoring additives (if necessary); the magnetic field with magnetic induction of 50 ± 30 mT is perpendicular to the direction of the flow of the liquid and is generated by at least three independent magnetic systems positioned under an angle not greater than 90 degrees one to the other and with successive alternating polarity. Streams of water flowing with velocity of at least 0.9 m/min are subjected to the effect of the magnetic field.

The layout of the arrangement of the magnets, which form the magnetotronic system, is shown in Figure 1. The structural diagram of the arrangement of the magnetotrons is shown in Figure 2.

In accordance with the invention, water flowing in the water-supply pipes with a velocity of at least 0.9 m/min is subjected to the effect of a magnetic field perpendicular to the direction of the flow of the liquid with magnetic induction of 20 to 80 mT in the center of the working clearance generated by a superimposed magnetotron.

The construction of the superimposed magnetotron consists of at least three pairs of magnets assembled in a block and positioned under an angle not greater than 90 degrees one to the other as shown in Figure 1. The superimposed type of the magnetotrons guarantees the preservation of the sterility of the input product required by the given production technology.

Following the magnetic field treatment of the liquid, it is subjected to setting and flocculation in volume for at least 2 minutes. The water is then subjected to secondary treatment in the magnetic field and is passed through a filter for mechanical (sorbent) purification removing the ferrous oxides, nitrates, heavy metals, residual chlorine and organic substances.

The filtrated water is then subjected for a third time to magnetic field treatment and is afterwards cooled down to $+15^{\circ}\text{C}$.

The cooled down water is then sent for bottling and before that, if necessary, it is subjected to aeration, addition of flavor ingredients, and analogical magnetic field treatment.

The described variant of implementation of the proposed method allows obtention of an ecologically pure product with structural homogeneity, high level of solubility due to the rheological effect of the magnetization, increased energy content, enhanced activity of the oxygen and the other gases that are dissolved in the liquid, and greater biological activity with bacteriostatic effect

The above-mentioned set of indicators obtained following the magnetization of the input components guarantees the biological and prophylactic effect of the obtained product.

Formula of the invention [Claim]

A method for obtaining ecologically pure magnetized water that includes flocculation of the ferromagnetic impurities, setting, filtration of the liquid, and magnetic field treatment characterized by introducing operations of cooling down the liquid to 15°C , aeration, and addition of flavor ingredients; the setting and the flocculation are performed for 2 min in one piece of equipment with the magnetic field being perpendicular to the direction of the flow of the liquid and with magnetic induction of 20 to 80 mT in the center of the working clearance, and this treatment takes place before the setting and the flocculation, before the cooling down, and before bottling of the aerated and flavored liquid.

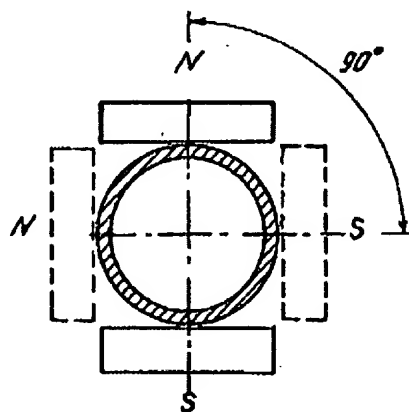


Figure 1

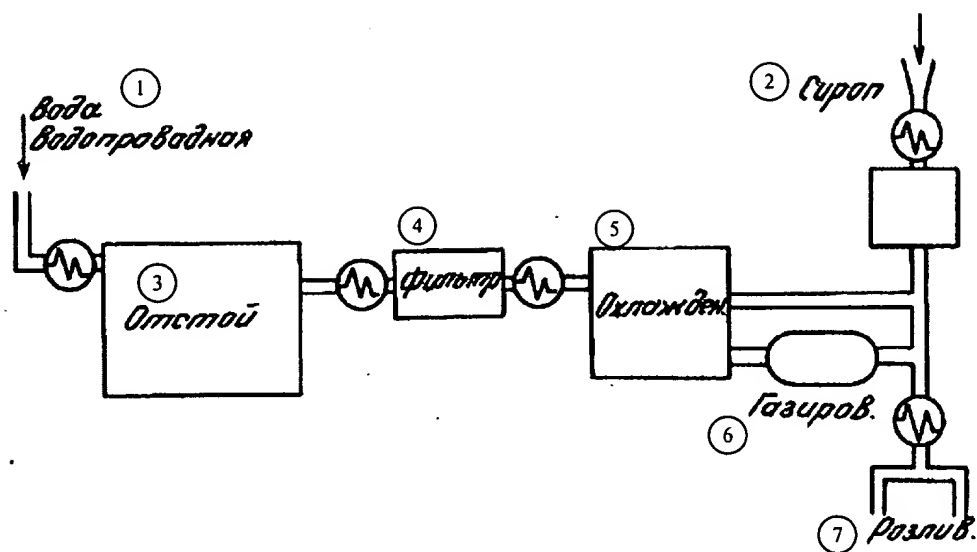


Figure 2

- Key:
- | | |
|---|--------------|
| 1 | Water supply |
| 2 | Syrup |
| 3 | Filter |
| 4 | Cooling down |
| 5 | Syrup |
| 6 | Aeration |
| 7 | Bottling |